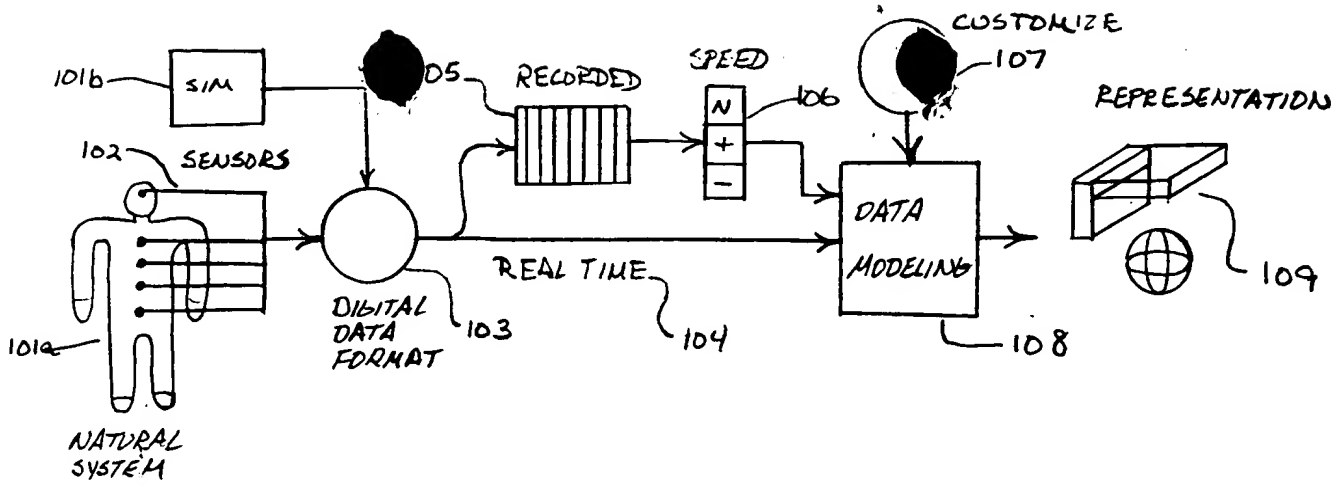


FIGURE 1a

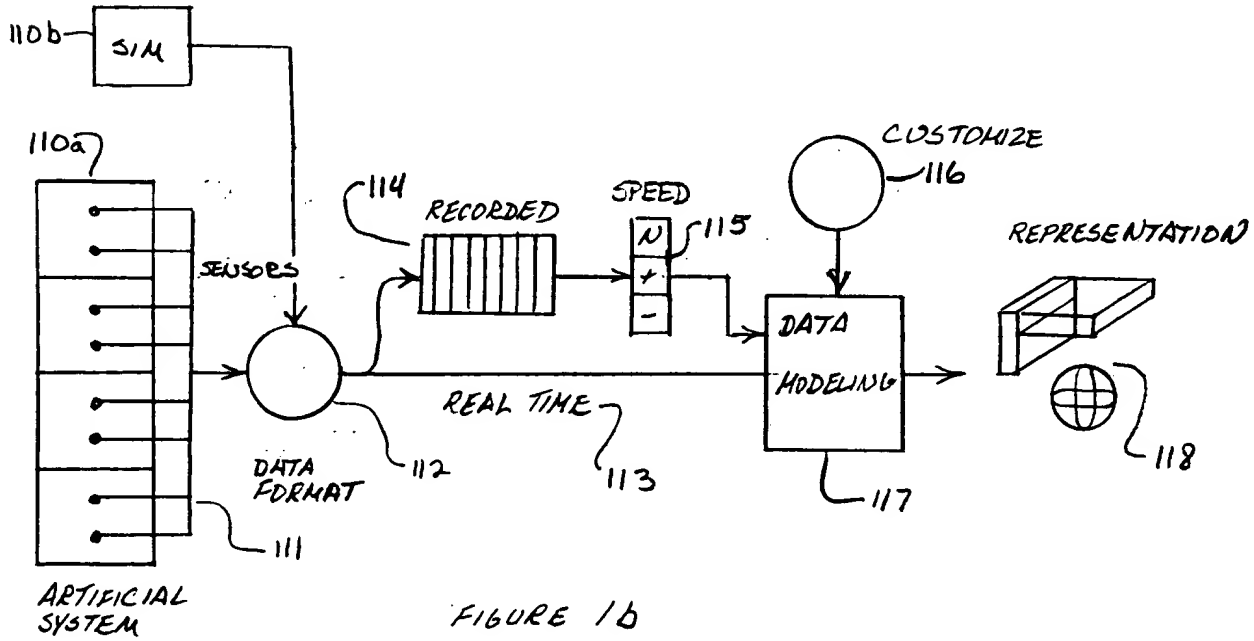


FIGURE 1b

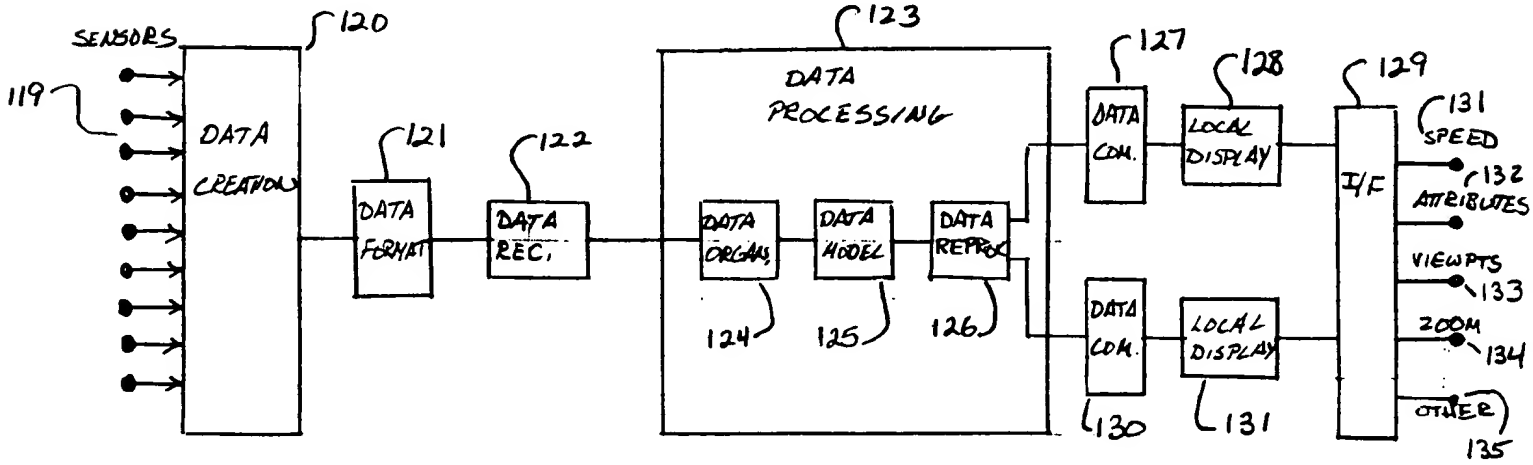


FIGURE 1c

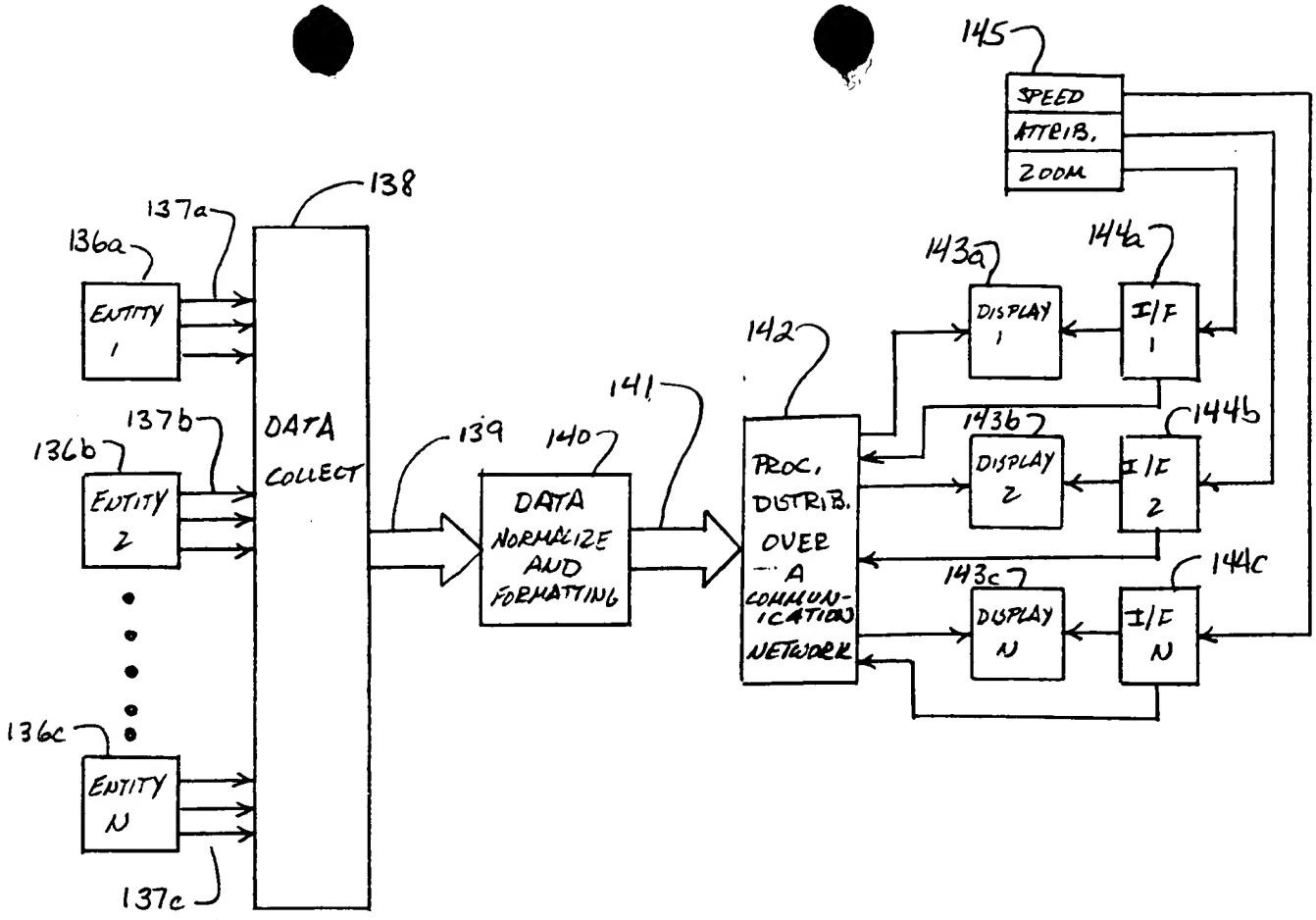
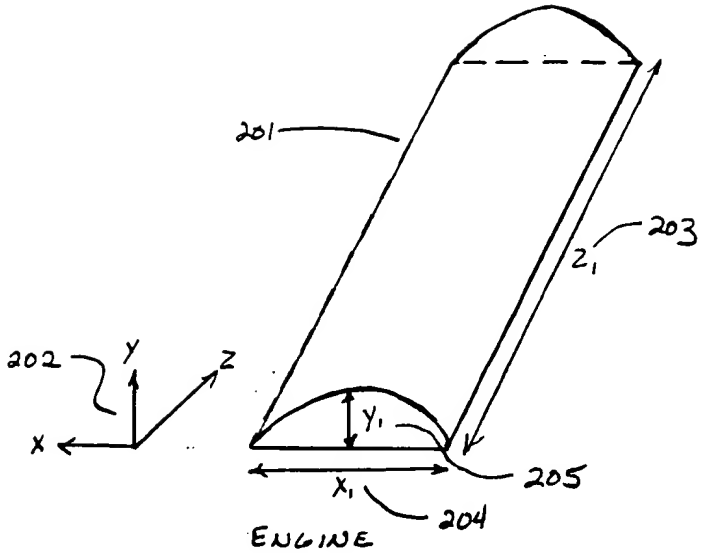


FIGURE 1d

09/05/2006 - 10:04:56



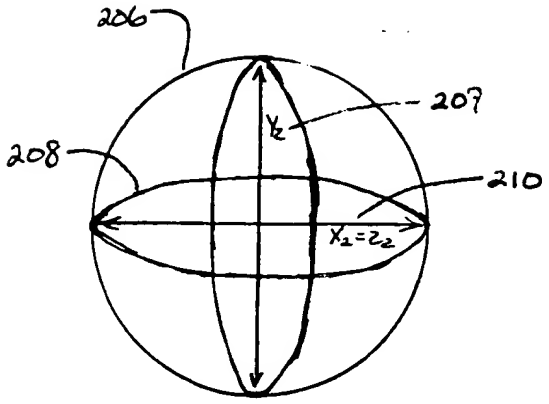
ENGINE

X_1 = ENGINE TEMPERATURE

Y_1 = ENGINE RPM

Z_1 = ENGINE EXHAUST GAS VOLUME

FIGURE 2a



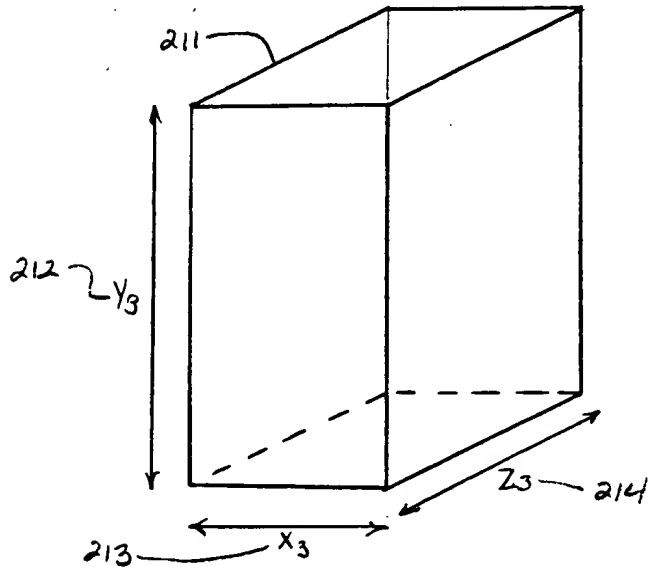
CARDIAC SYSTEM FUNCTION

$X_2=Z_2$ = HEART RATE / SECOND

Y_2 = STROKE VOLUME

SPHERICAL VOLUME = CARDIAC OUTPUT

FIGURE 2b



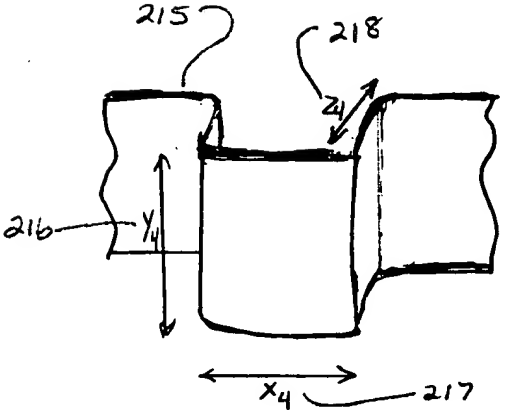
SALES DEPARTMENT OPERATION

X_3 = AVE TIME / CONTRACT

Y_3 = # OF CONTRACTS

Z_3 = AVE REVENUE / CONTRACT

FIGURE 2c



RESPIRATORY FUNCTION

X_4 = RESPIRATORY

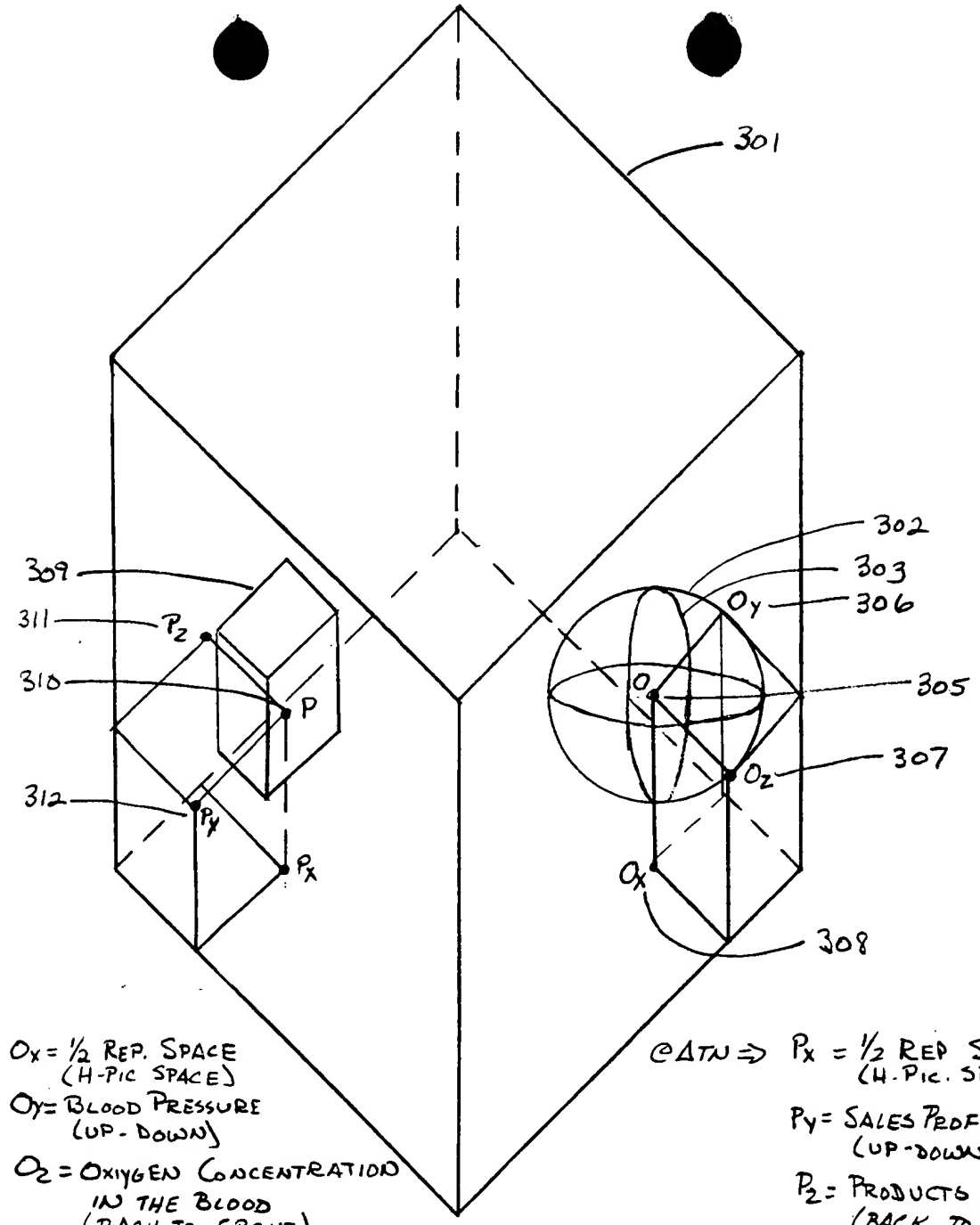
Y_4 = FCN of X_4 and RESP. VOLUME

Z_4 = +/- INHALATION / EXHALATION

SLAB VOLUME = RESPIRATORY VOLUME

FIGURE 2d

Docket: EJ792160420US



@ΔTN ⇒ O_x = ½ REP. SPACE (H-PIC SPACE)

O_y = BLOOD PRESSURE (UP-DOWN)

O_z = OXIYGEN CONCENTRATION IN THE BLOOD (BACK TO FRONT)

@ΔTN ⇒ P_x = ½ REP SPACE (H-PIC. SPACE)

P_y = SALES PROFIT (UP-DOWN)

P_z = PRODUCTS IN STOCK (BACK TO FRONT)

FIGURE 3

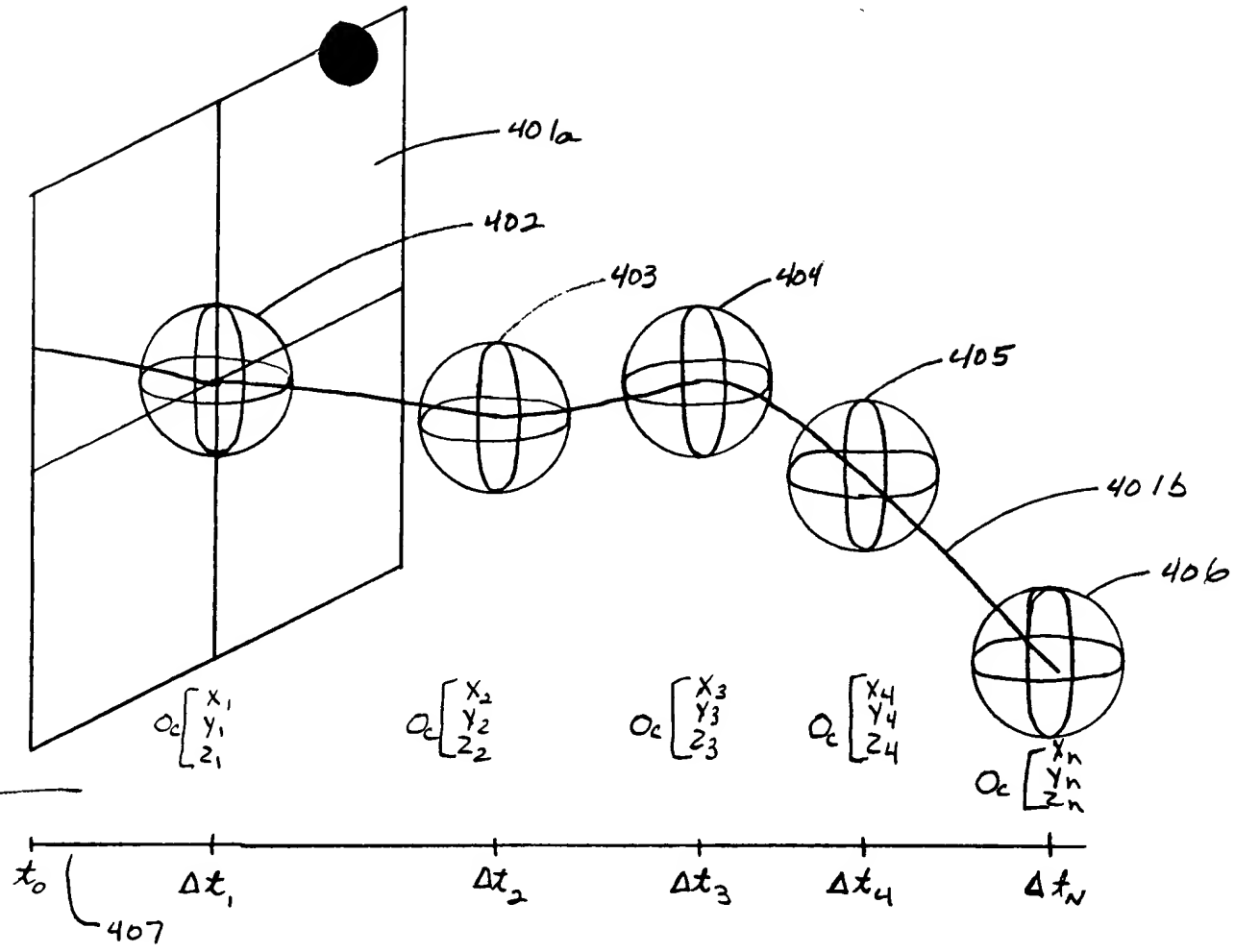
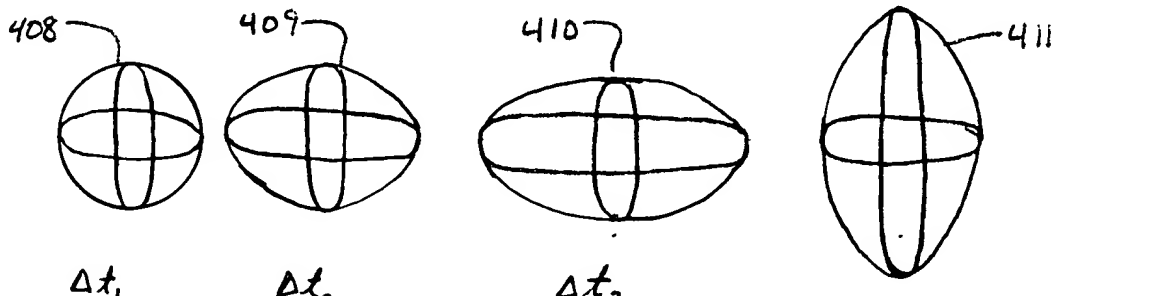


FIGURE 4a



Δt_1

$X_1 = Z_1$

Y_1

Δt_2

$[X_2 = Z_2] > [X_1 = Z_1]$

$Y_2 > Y_1$

Δt_3

$[X_3 = Z_3] > [X_2 = Z_2]$

$Y_3 > Y_2$

Δt_n

$[X_n = Z_n] < [X_3 = Z_3]$

$Y_n > Y_3$

VOLUME n = VOLUME 3

FIGURE 4b

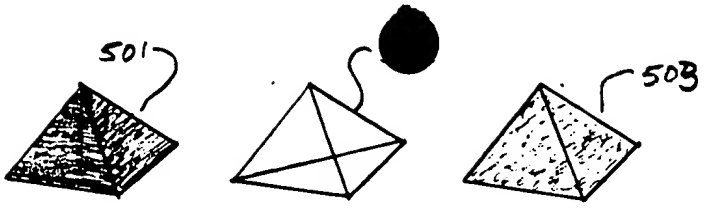


FIGURE 5a

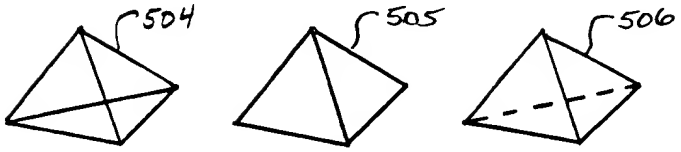


FIGURE 5b

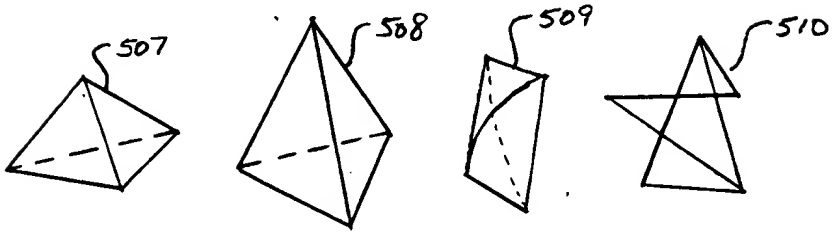


FIGURE 5c

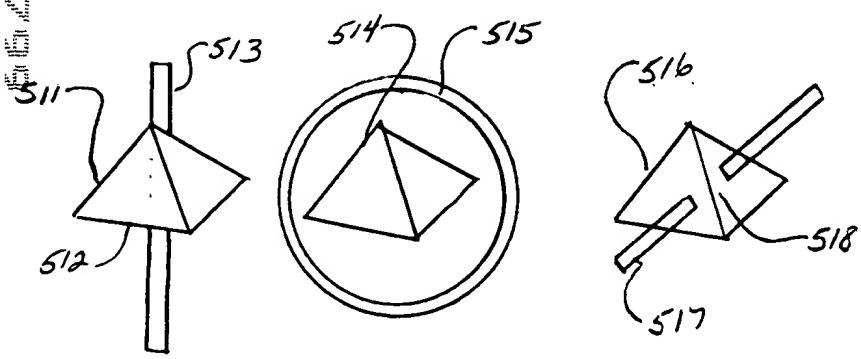


FIGURE 5d

Express Mail Label No. EJ792160420US

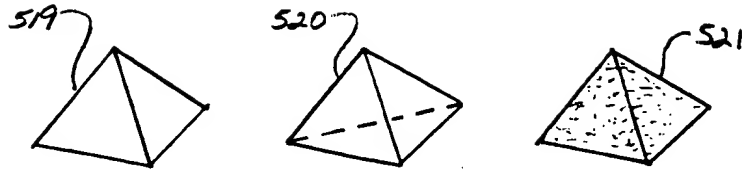


FIGURE 5e

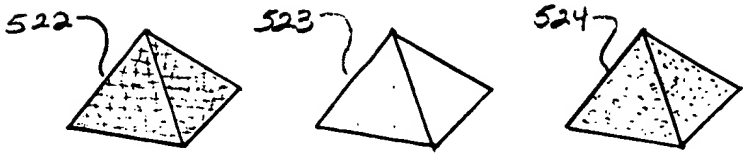


FIGURE 5f

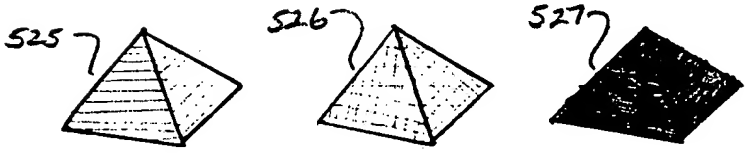


FIGURE 5g

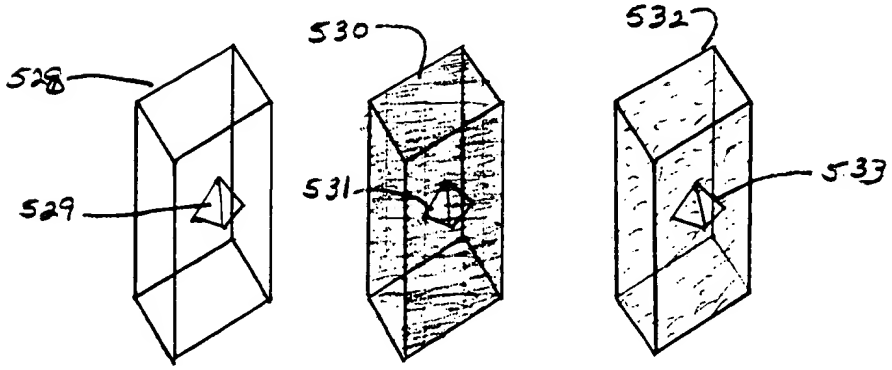


FIGURE 5h

Docket No. EJ792160420US

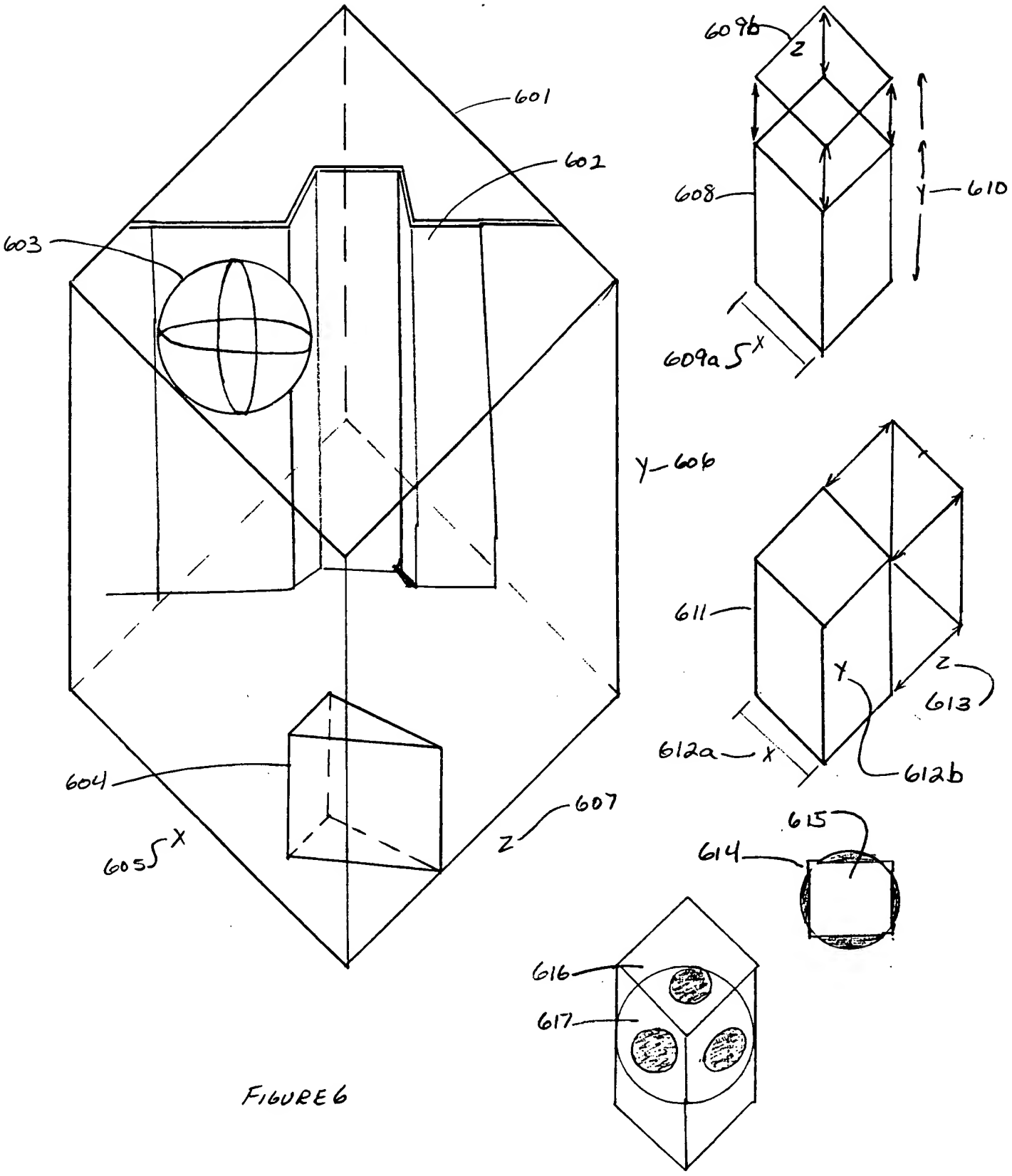

601
602
603
604
605
X
607
Z
609b
Z
608
Y
610
609a
X
Y
606
611
Y
Z
613
612a
X
612b
615
614
616
617

FIGURE 6

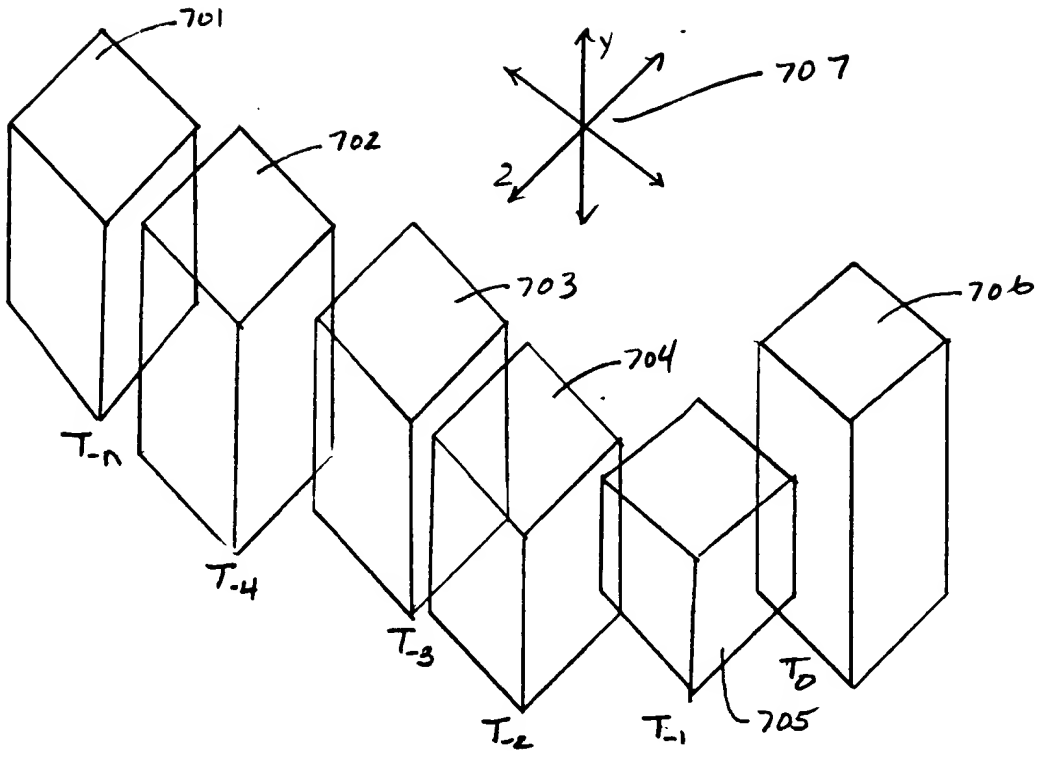


FIGURE 7

09/754,056 - 12/04/2003

EJ792160420US

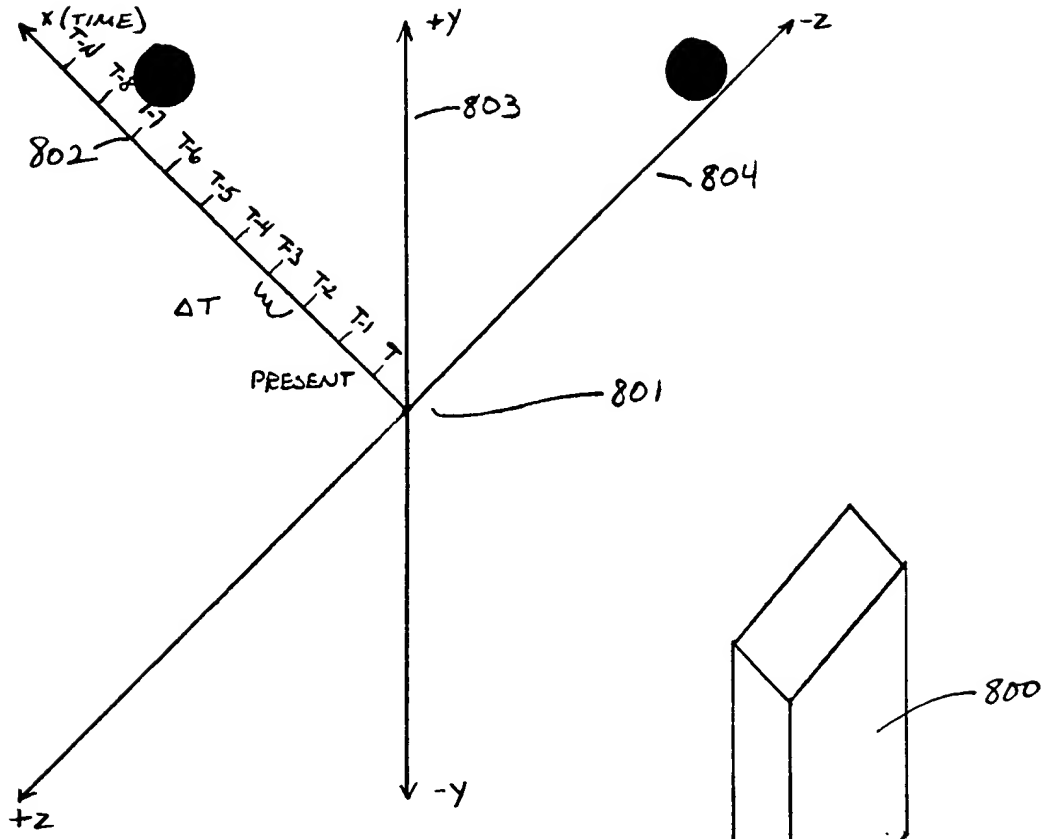


FIGURE 8a

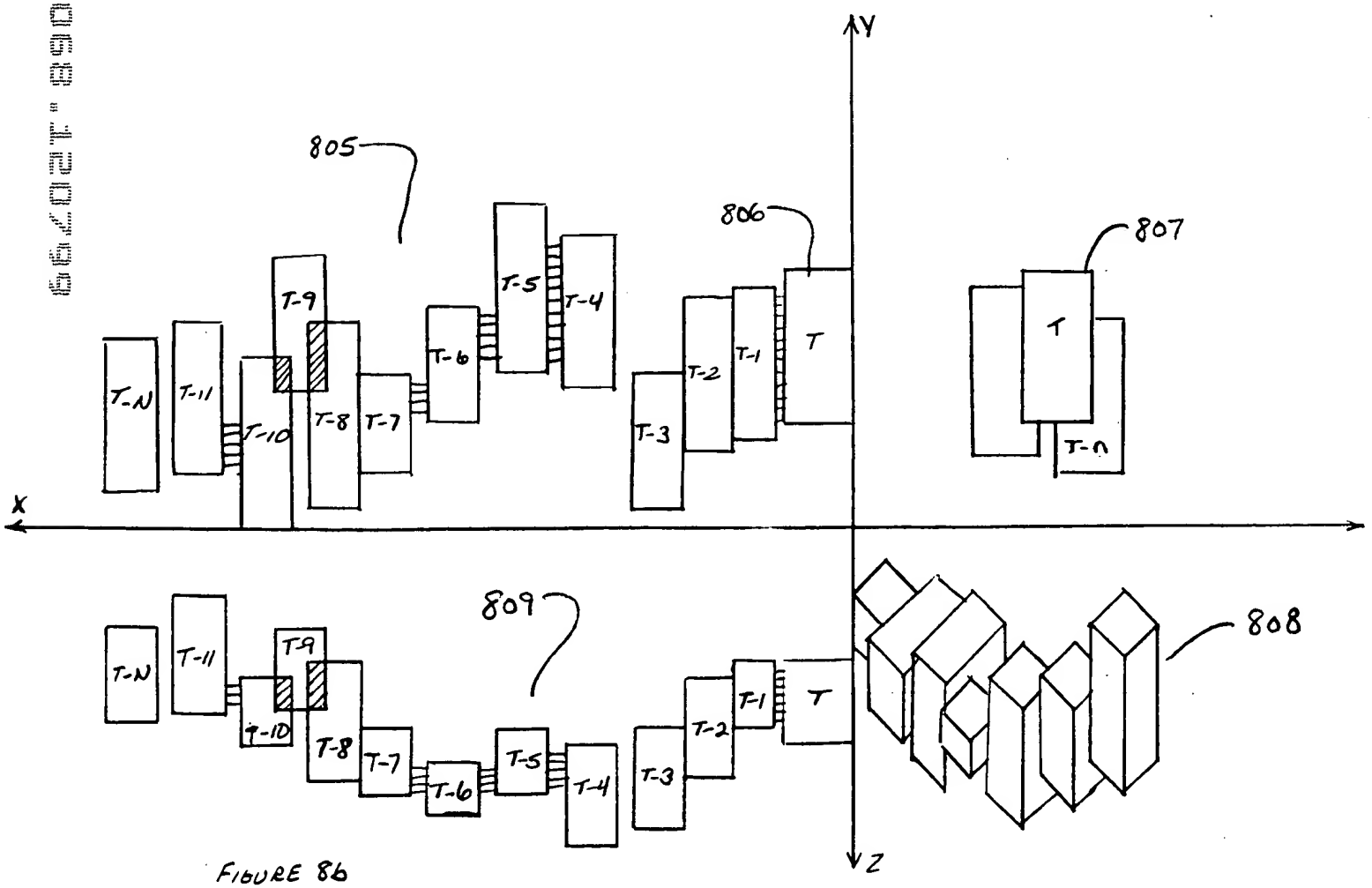


FIGURE 8b

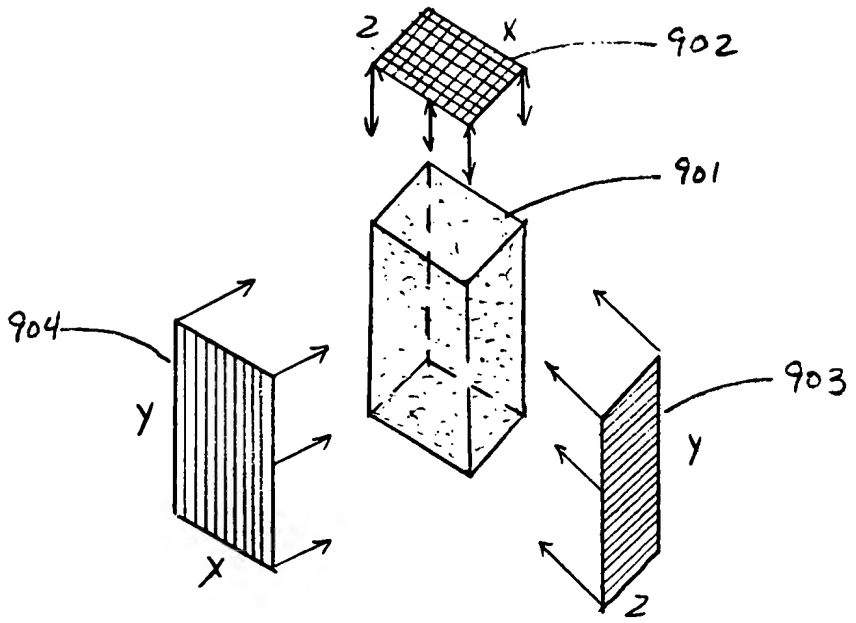


FIGURE 9a

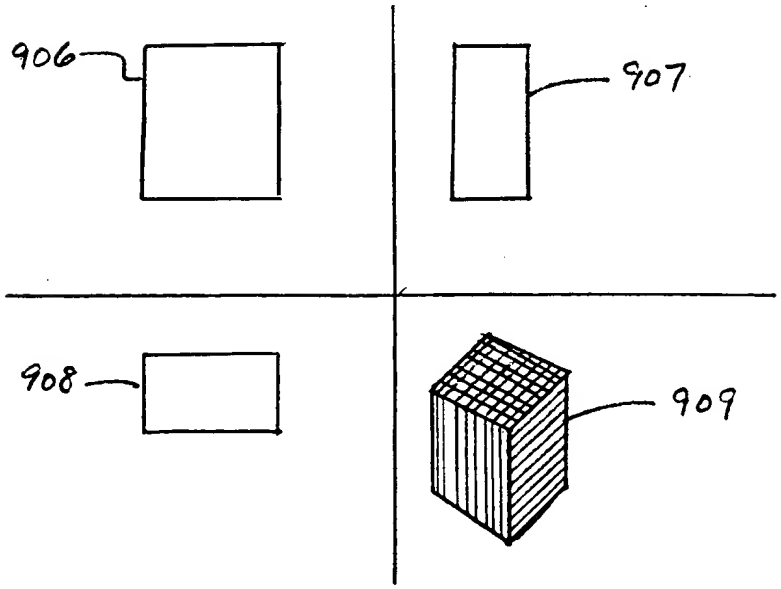


FIGURE 9b

6,420,540-050504

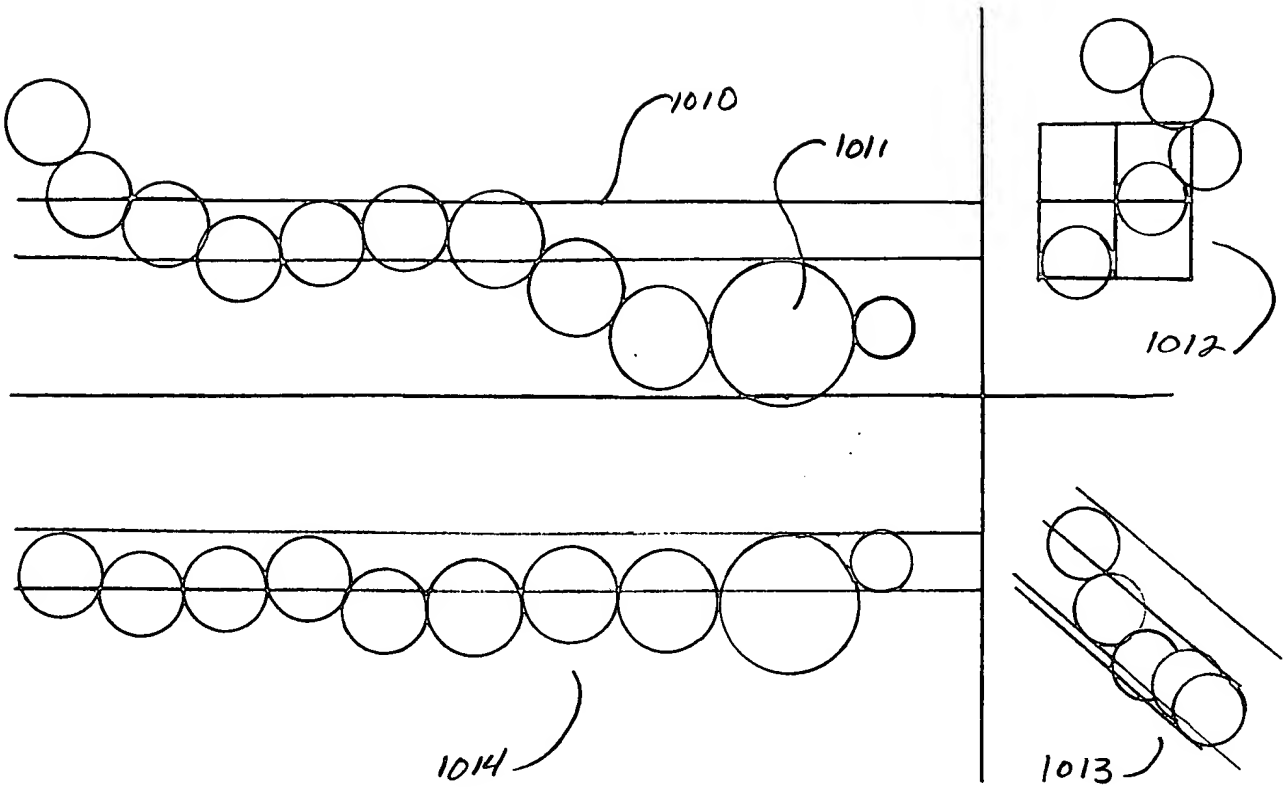


FIGURE 10

Express Mail Label No. EV792160420US

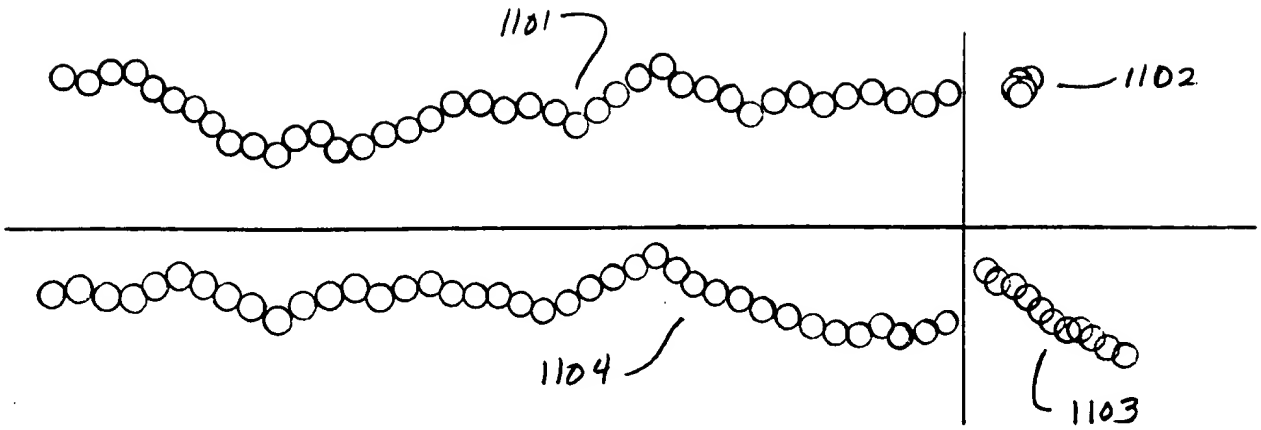


FIGURE 11a

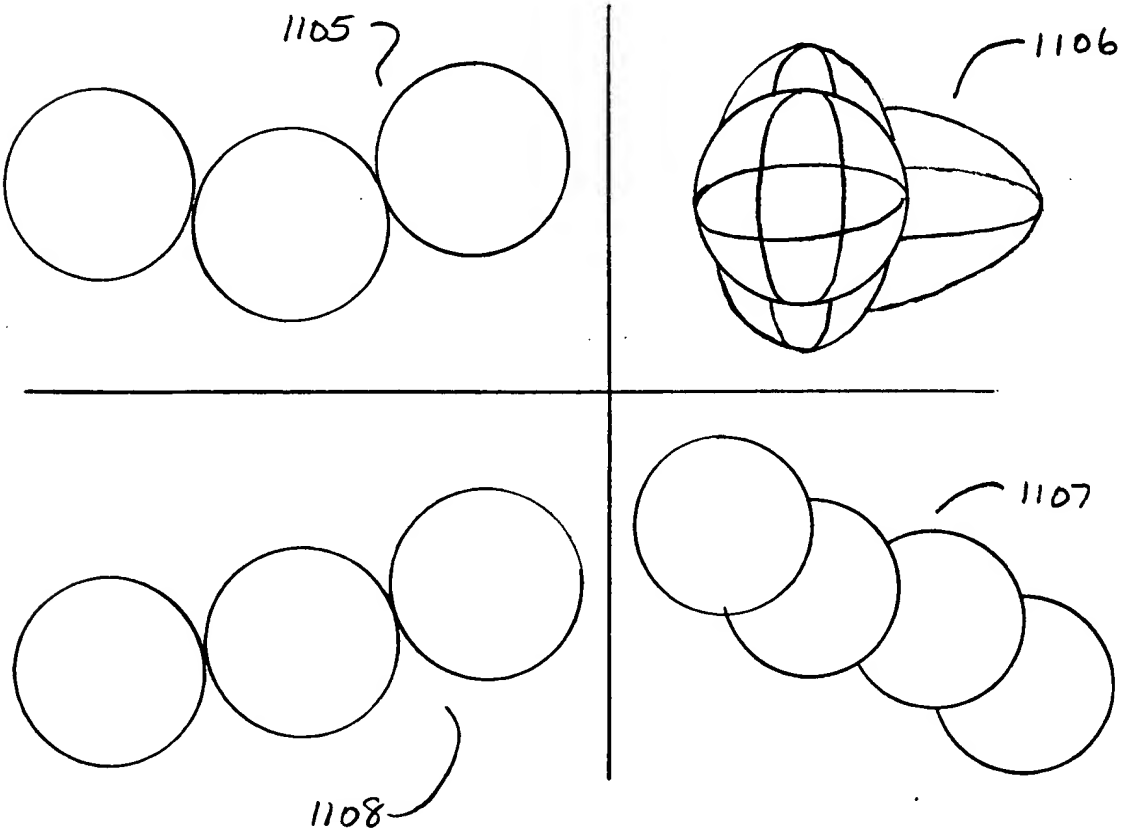


FIGURE 11b

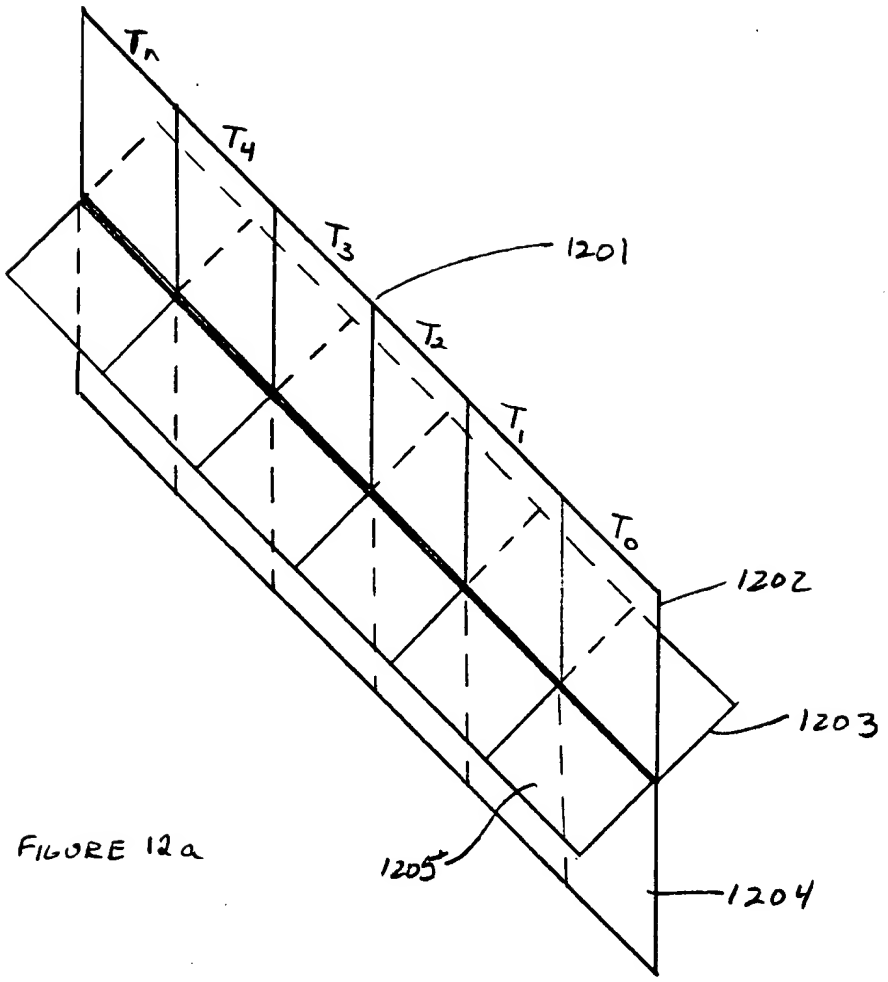


FIGURE 12a

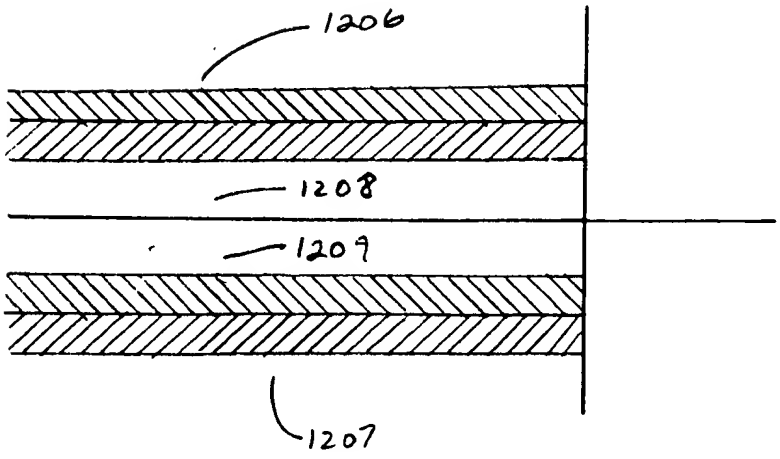


FIGURE 12b

EJ792160420US

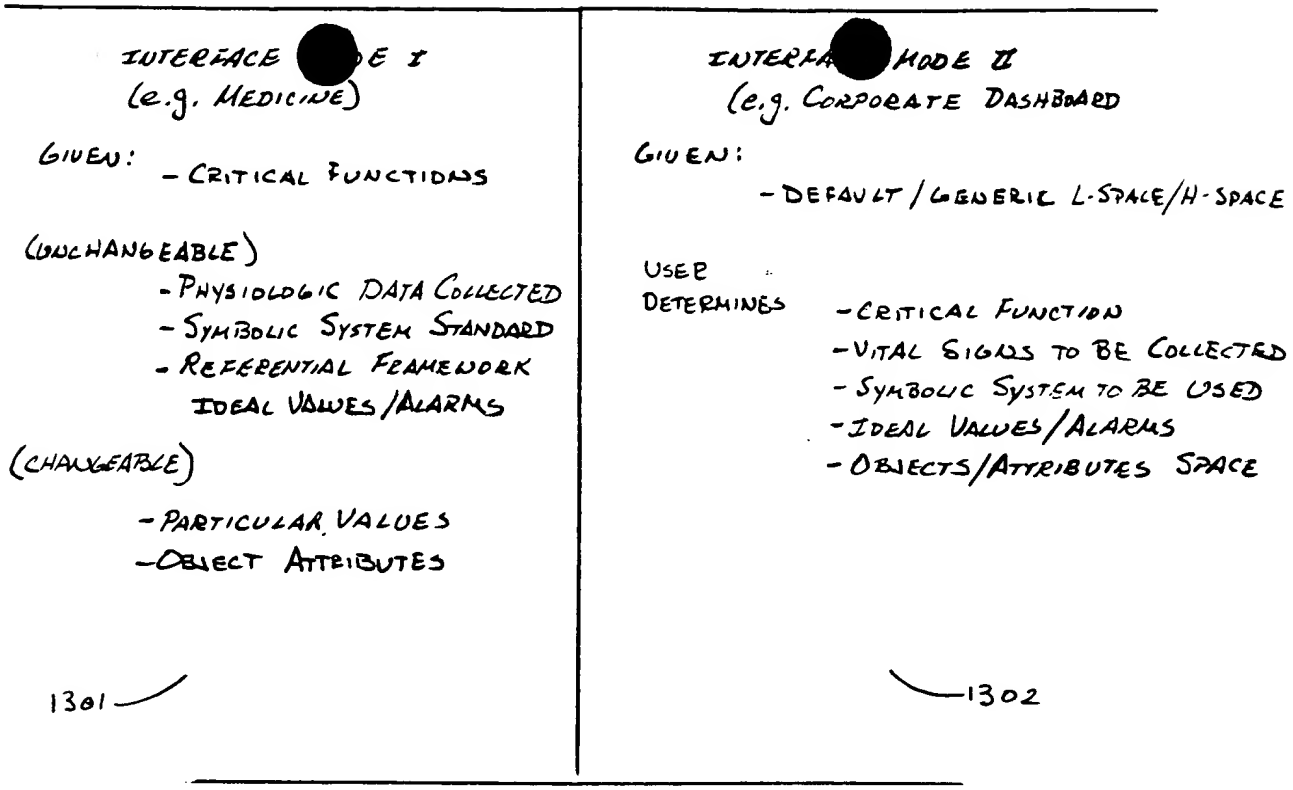

INTERFACE MODE I
(e.g. MEDICINE)
GIVEN:
- CRITICAL FUNCTIONS
(UNCHANGEABLE)
- PHYSIOLOGIC DATA COLLECTED
- SYMBOLIC SYSTEM STANDARD
- REFERENTIAL FRAMEWORK
IDEAL VALUES/ALARMS
(CHANGEABLE)
- PARTICULAR VALUES
- OBJECT ATTRIBUTES
1301
INTERFACE MODE II
(e.g. CORPORATE DASHBOARD
GIVEN:
- DEFAULT / GENERIC L-SPACE/H-SPACE
USER DETERMINES
- CRITICAL FUNCTION
- VITAL SIGNS TO BE COLLECTED
- SYMBOLIC SYSTEM TO BE USED
- IDEAL VALUES/ALARMS
- OBJECTS/ATTRIBUTES SPACE
1302
COMMON INTERFACE FEATURES
- L-SPACE
- H-SPACE
- ZOOM/SPEED
- VIEWPOINTS

FIGURE 13

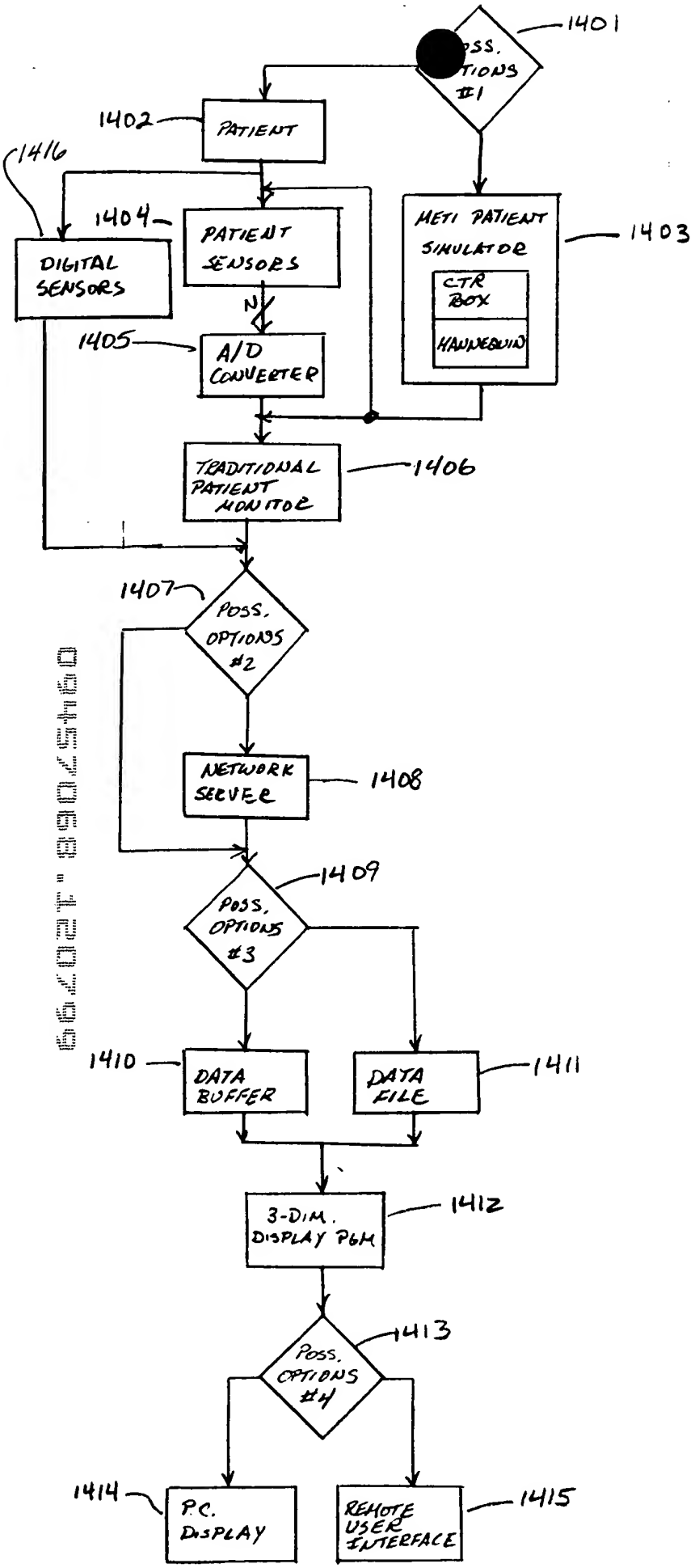

1401
POSS. OPTIONS #1
1402
PATIENT
1416
1404
PATIENT SENSORS
DIGITAL SENSORS
METI PATIENT SIMULATOR
1403
CTR BOX
HARNESS
N
1405
A/D CONVERTER
TRADITIONAL PATIENT MONITOR
1406
1407
POSS. OPTIONS #2
NETWORK SERVER
1408
1409
POSS. OPTIONS #3
1410
DATA BUFFER
DATA FILE
1411
3-DIM. DISPLAY PGM
1412
1413
POSS. OPTIONS #4
1414
P.C. DISPLAY
REMOTE USER INTERFACE
1415

FIGURE 14

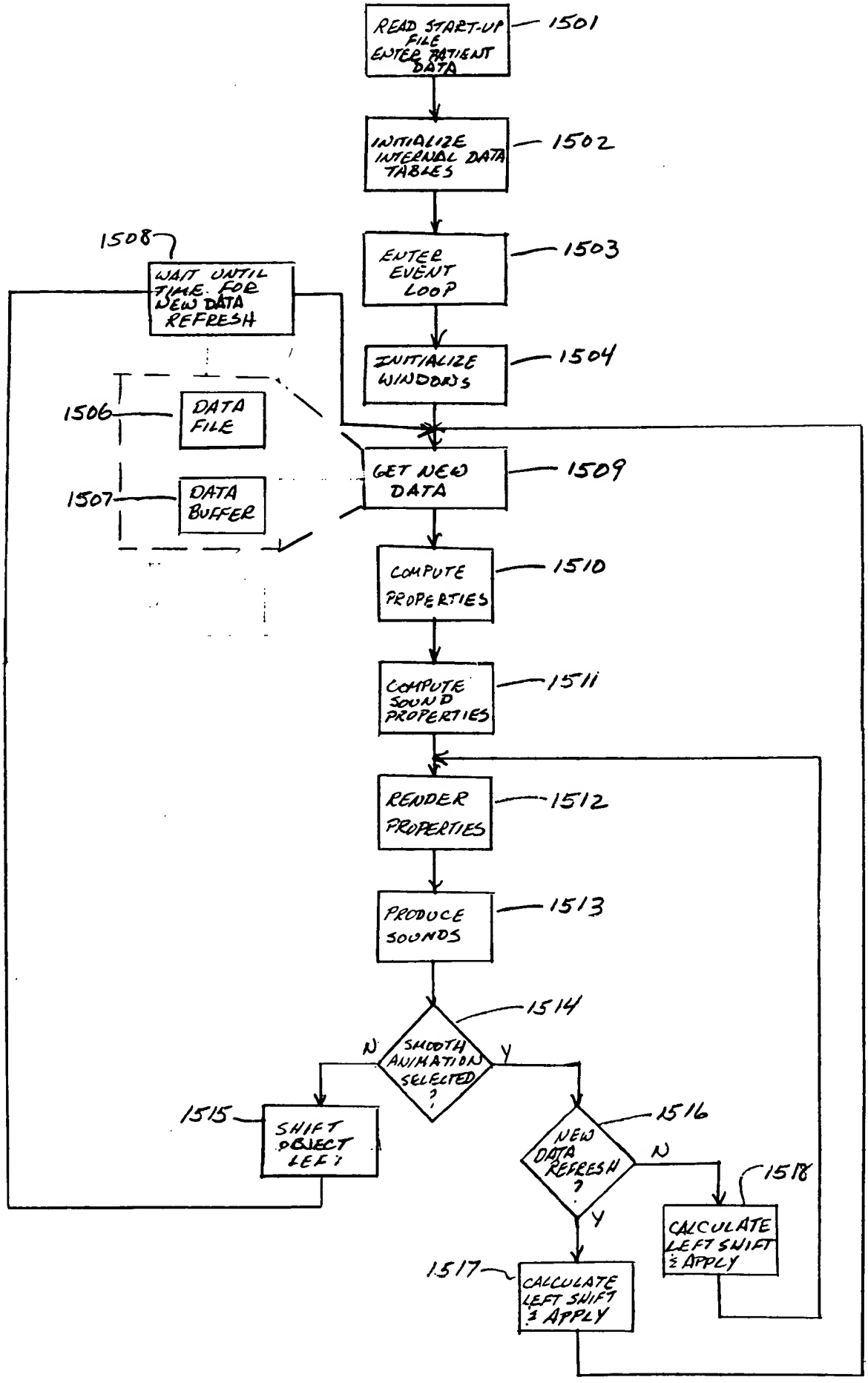

READ START-UP FILE ENTER PATIENT DATA
1501
INITIALIZE INTERNAL DATA TABLES
1502
ENTER EVENT LOOP
1503
INITIALIZE WINDOWS
1504
1508
WAIT UNTIL TIME FOR NEW DATA REFRESH
1506
DATA FILE
1507
DATA BUFFER
GET NEW DATA
1509
COMPUTE PROPERTIES
1510
COMPUTE SOUND PROPERTIES
1511
RENDER PROPERTIES
1512
PRODUCE SOUNDS
1513
1514
SMOOTH ANIMATION SELECTED ?
N
Y
1515
SHIFT OBJECT LEFT
1516
NEW DATA REFRESH ?
N
Y
1518
CALCULATE LEFT SHIFT & APPLY
1517
CALCULATE LEFT SHIFT & APPLY

FIGURE 15

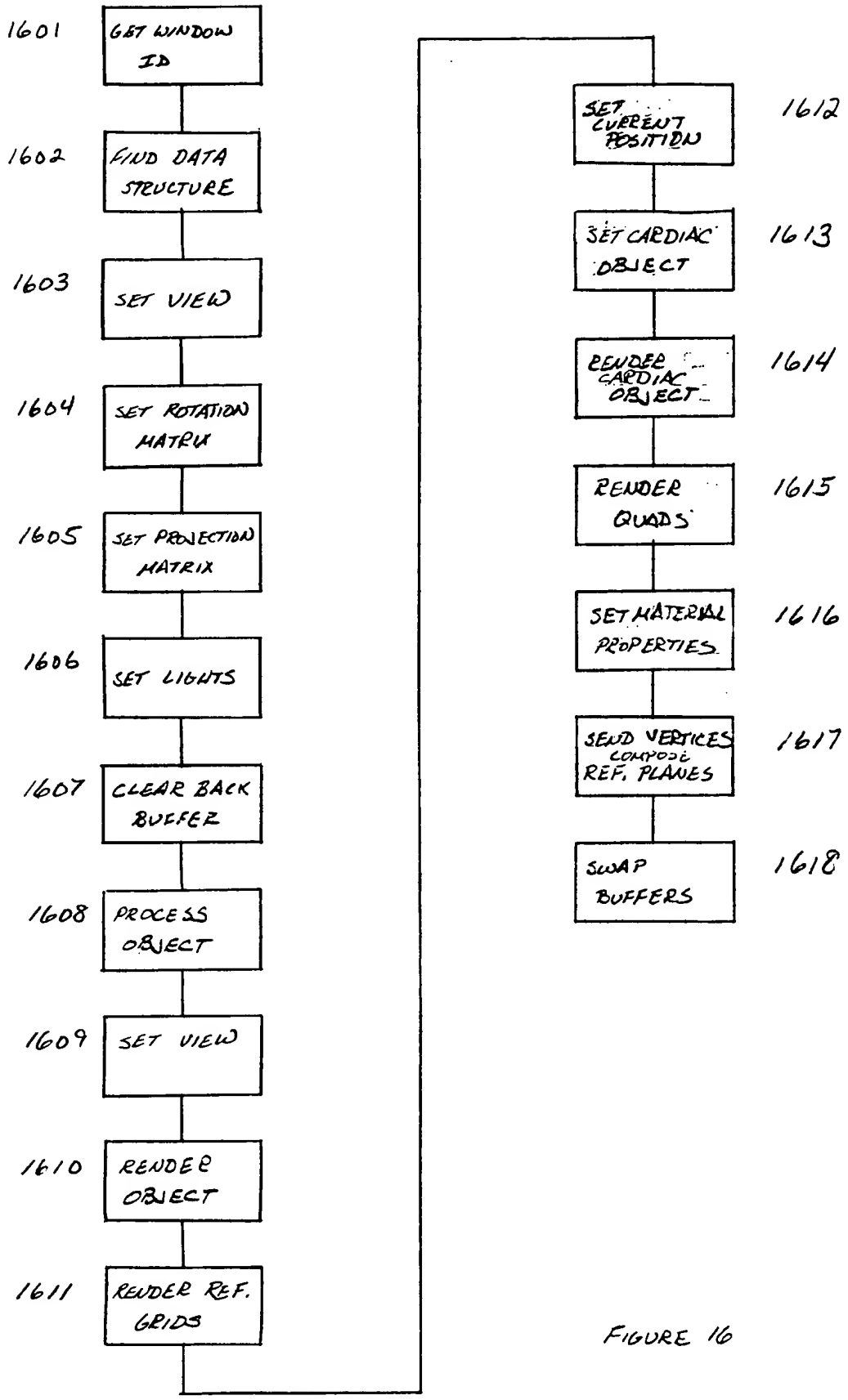


FIGURE 16

Doc5008 - Filed 05/05/08

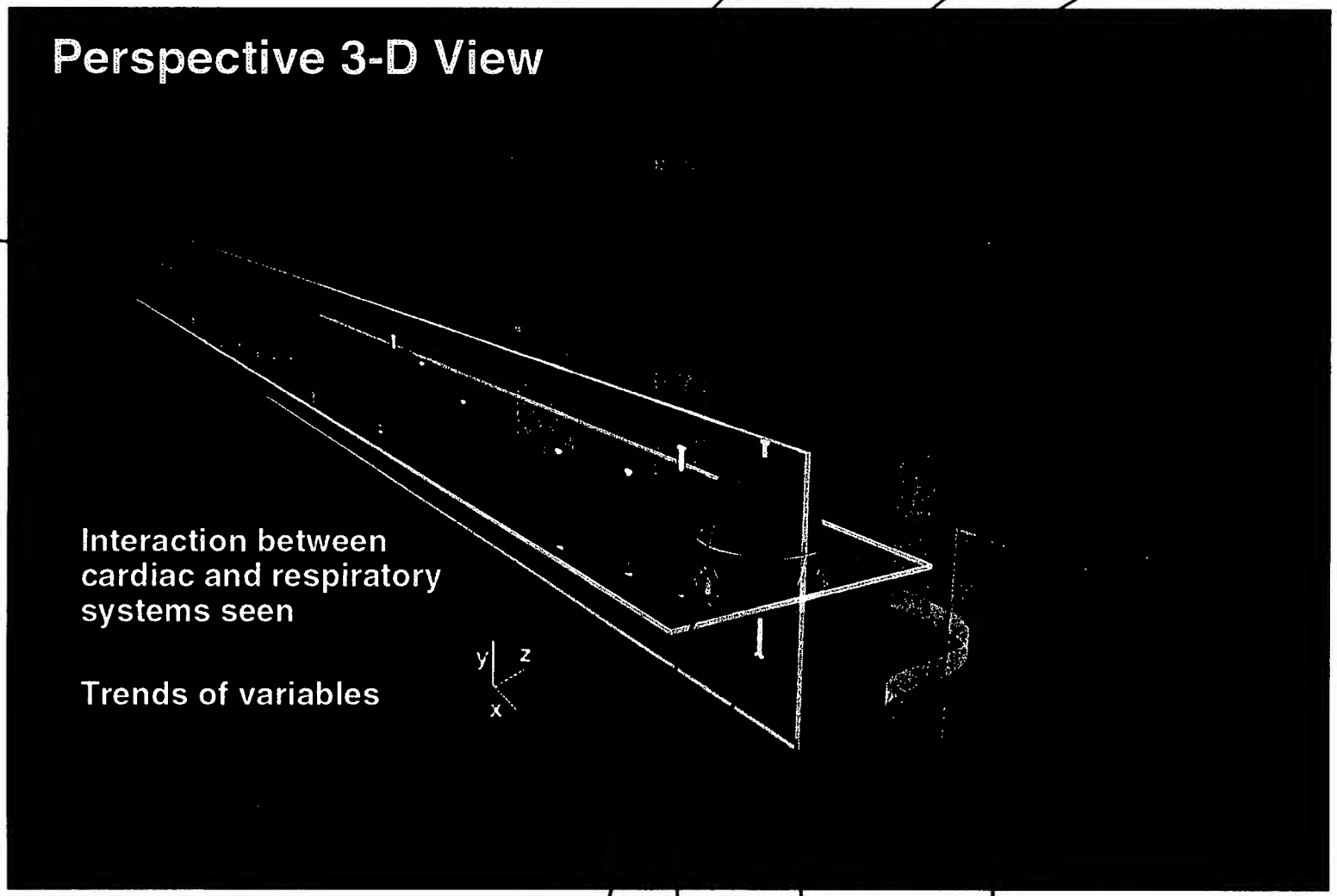

2200
2204
2205
2207
Perspective 3-D View
Interaction between cardiac and respiratory systems seen
Trends of variables
y
z
x
2201
2203
2202
2206

FIGURE 22

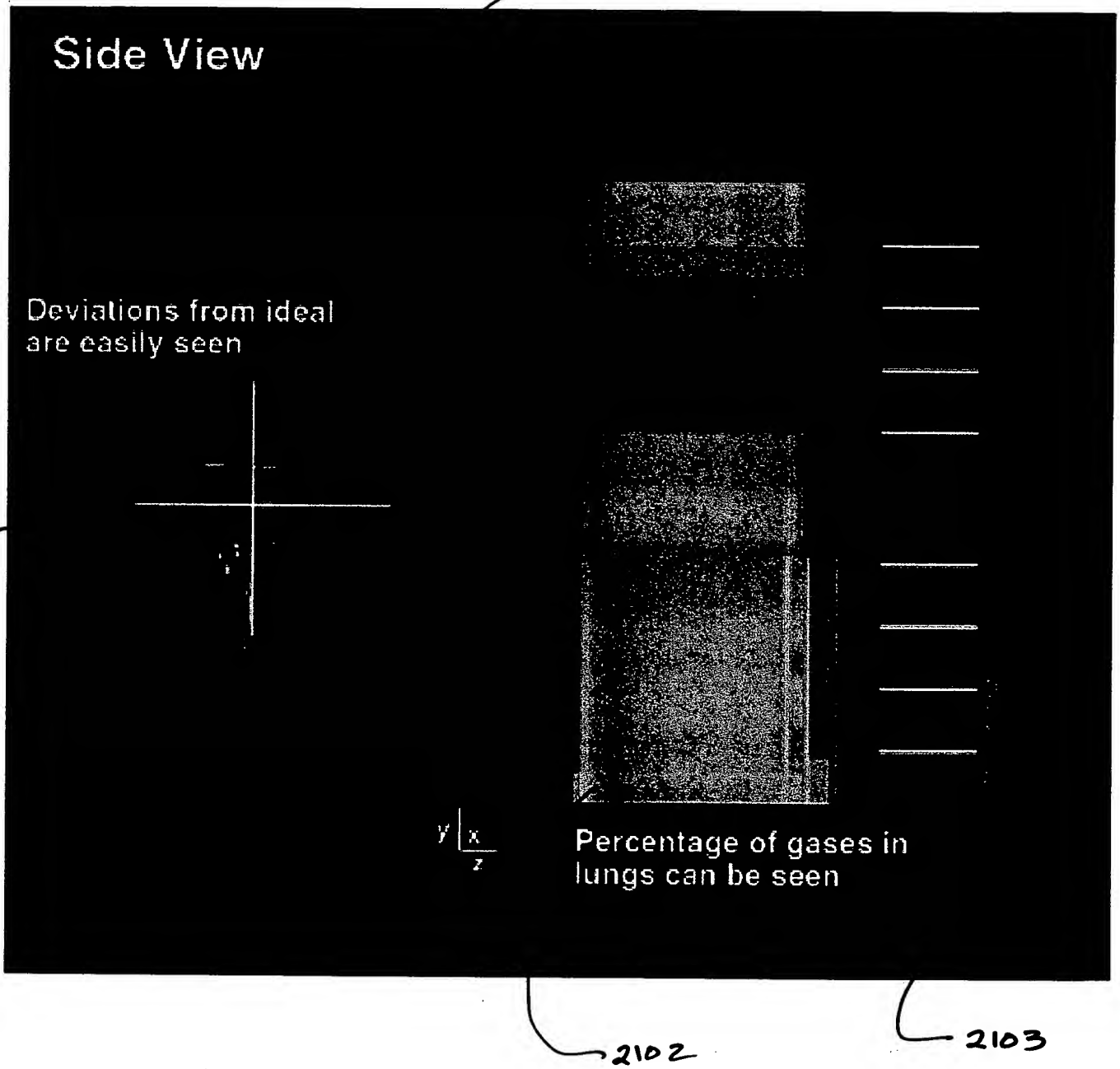

2100
Side View
Deviations from ideal
are easily seen
2101
Percentage of gases in
lungs can be seen
2102
2103

FIGURE 21

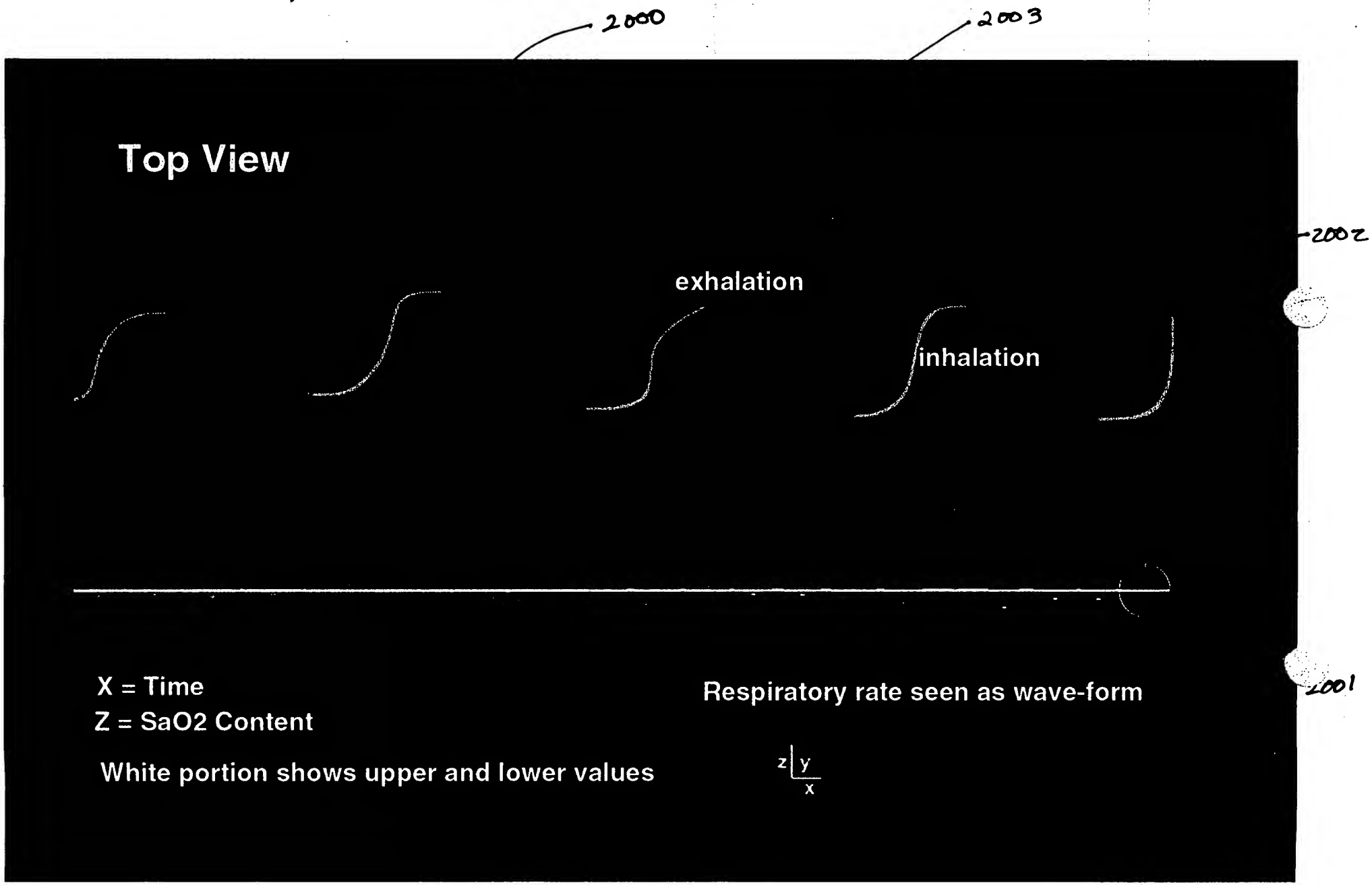

2000
2003
Top View
2002
exhalation
inhalation
2001
X = Time
Z = SaO2 Content
White portion shows upper and lower values
Respiratory rate seen as wave-form
z
y
x

FIGURE 20

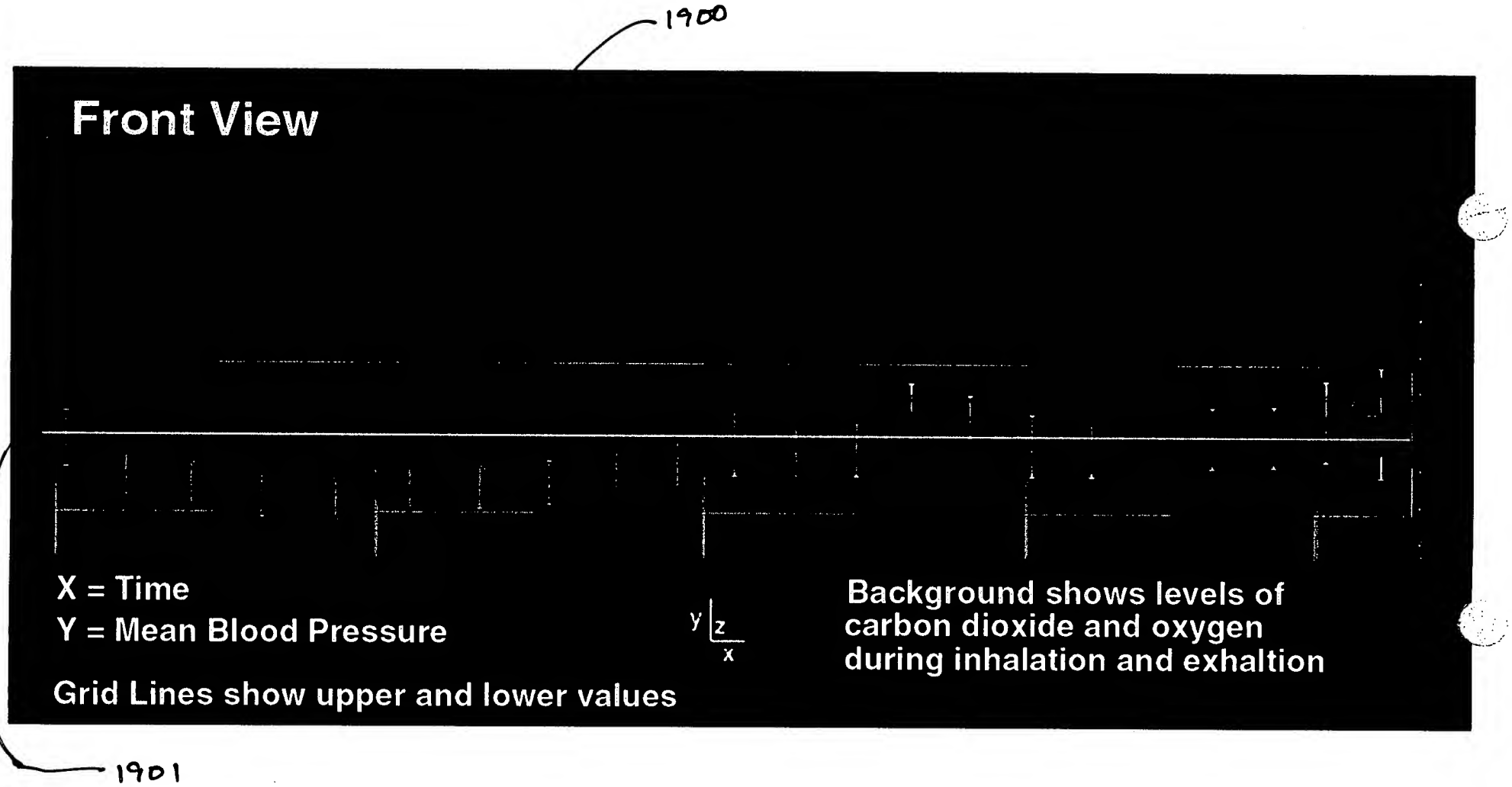

1900
Front View
X = Time
Y = Mean Blood Pressure
Grid Lines show upper and lower values
y | z
x
Background shows levels of carbon dioxide and oxygen during inhalation and exhaltion
1901

FIGURE 19

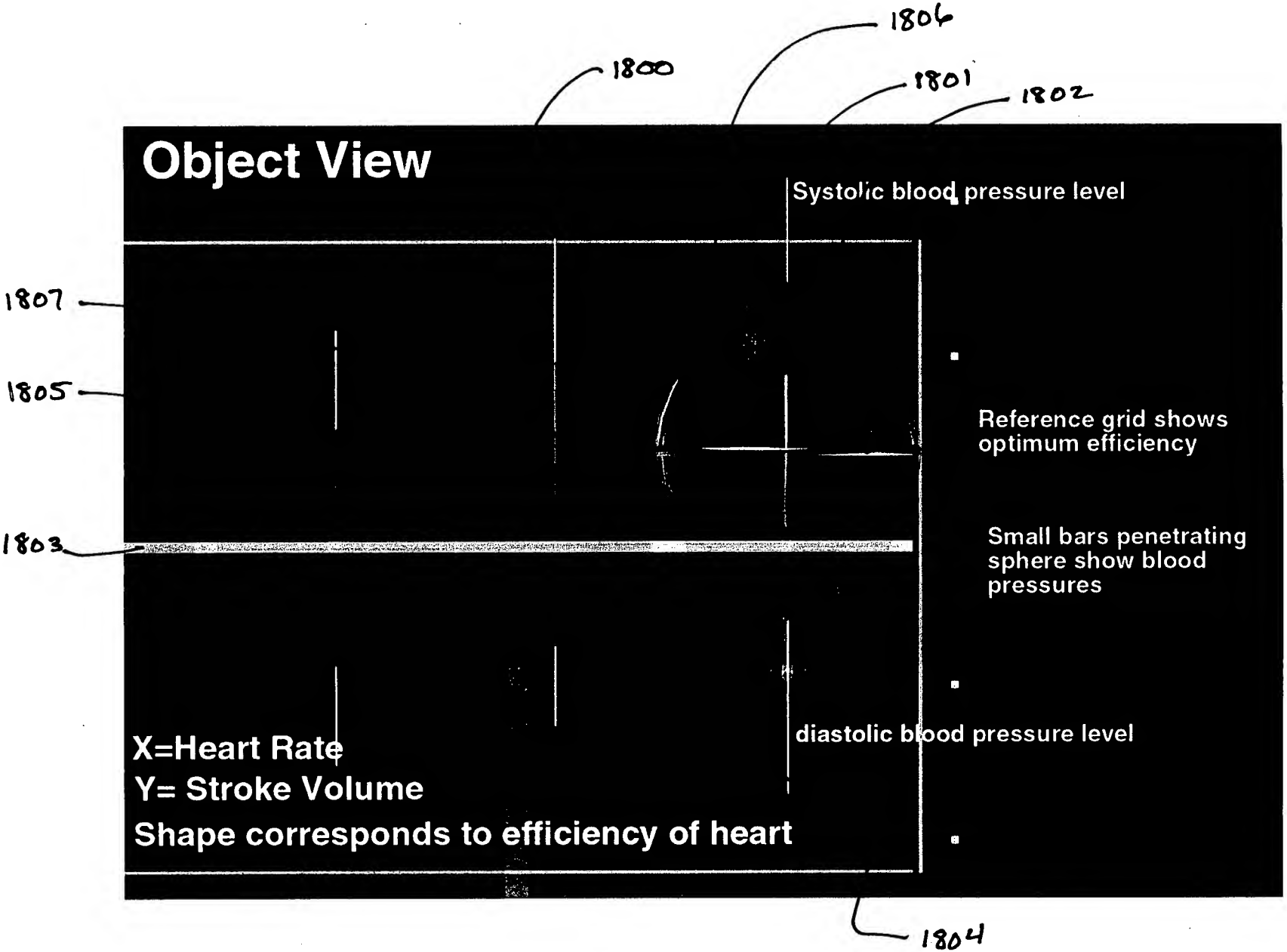

1806
1800
1801
1802
Object View
Systolic blood pressure level
1807
1805
Reference grid shows optimum efficiency
1803
Small bars penetrating sphere show blood pressures
diastolic blood pressure level
X=Heart Rate
Y= Stroke Volume
Shape corresponds to efficiency of heart
1804

FIGURE 18

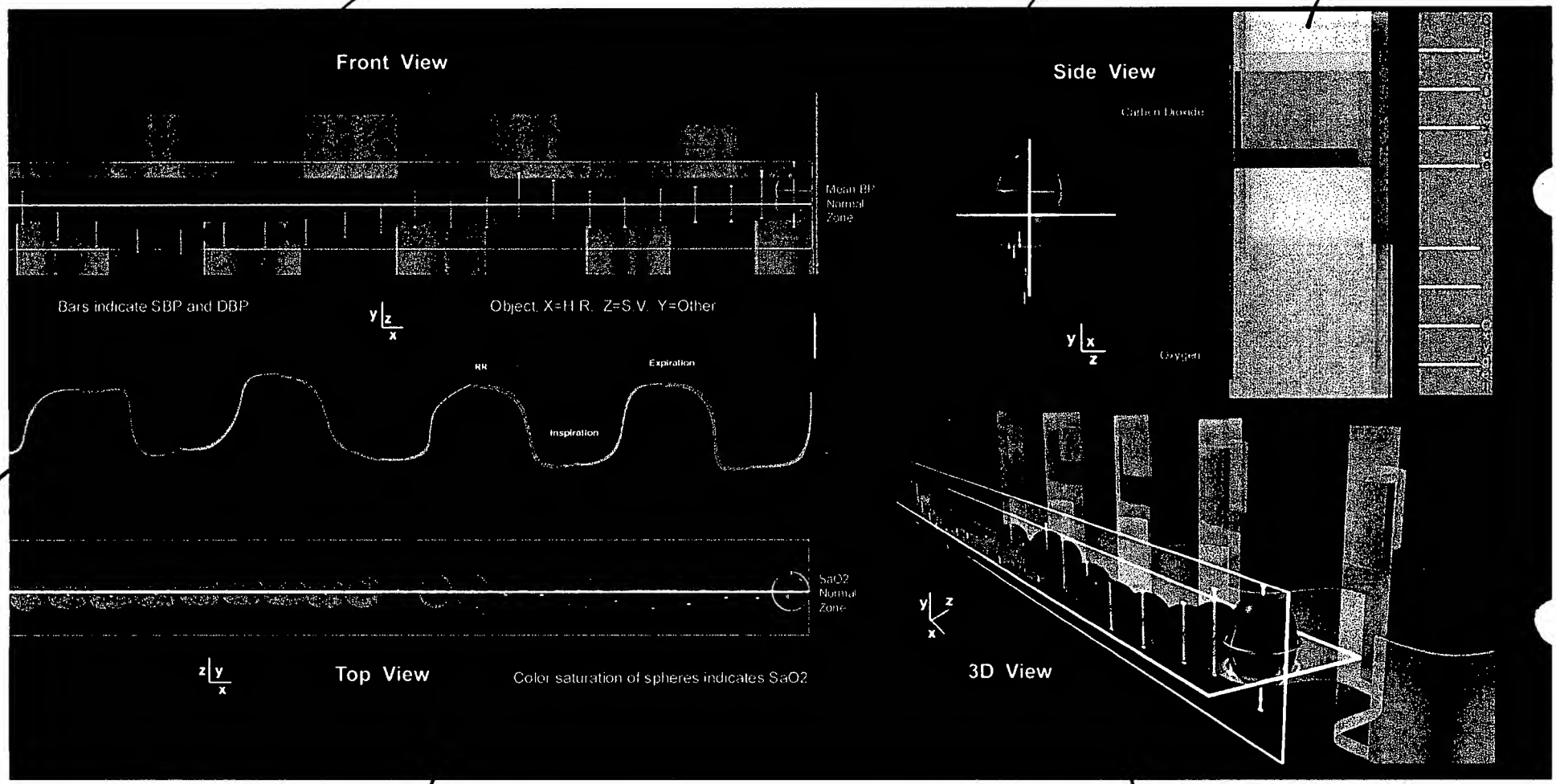

1701
1704
1705
Front View
Mean BP Normal Zone
Bars indicate SBP and DBP
Object. X=H.R. Z=S.V. Y=Other
RR
Expiration
Inspiration
SaO2 Normal Zone
Top View
Color saturation of spheres indicates SaO2
Side View
Carbon Dioxide
Oxygen
3D View
1703
1702
1706

FIGURE 17